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ABSTRACT

The process of teaching reading to 12 second- and third-grade learning-disabled children was investigated in mainstream classrooms and resource rooms. The study focused on how the process of achieving intersubjectivity in a routine task like reading takes place and how the construction of intersubjectivity (referred to as scaffolding) can vary as a result of the teacher norms being brought to the task. Transcripts of teacher-child interaction were coded according to Vygotskian principles. Resource teachers were found to apply these principles more consistently than mainstream teachers. As a result, resource teachers had longer interactions with children in which they made more adjustments that catered to a reader's zone of proximal development. Students in resource rooms were also more likely to have successful reading episodes and were more likely to initiate interaction. It is concluded that resource room teacher-child interactions were longer because mainstream teachers persisted in the use of the recitation model of teaching to a greater extent than did resource teachers, and because mainstream classroom settings used a more hierarchical physical arrangement of space and the teacher's position. It is suggested that resource rooms are more effective in supporting learning-disabled children academically. (Includes seven references.) (Author/JDD)

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An Examination of the Process of Teaching Reading to Learning Disabled Children: Vygotskian Perspectives

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ABSTRACT

The process of teaching reading to learning disabled children was investigated in three schools in a large Southwestern school district. Instruction was compared in two settings: the mainstream classroom and the resource room. Group size was similar in the two settings. Transcripts of teacher-child interaction were coded according to Vygotskian principles. Resource teachers were found to apply these principles more consistently than mainstream teachers. As a result resource teachers had longer interactions with children in which they made more adjustments that catered to a reader's zone of proximal development. Students were also more likely to have successful reading episodes. They were more likely to initiate interaction. The conclusion will discuss how Vygotskian principles are similar to and help explain many of the newly emerging principles of effective teaching.

INTRODUCTION

Earlier studies applying Vygotskian theory to learning situations were performed mostly with preschool-age children performing novel tasks (Wertsch 1978, 1979; Wertsch, Minick and Arns 1984; Wood and Middleton 1975; Wood, Bruner and Ross 1976; Wood, Wood and Middleton 1978). In these studies, the process of achieving intersubjectivity was directly correlated with learning the goals and structure of a task.

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In the classroom, however, many tasks have a routine structure. Thus, for example, when a child achieves intersubjectivity with his/her teacher, it is not the task structure that intersubjectivity is being newly built around, but rather the content of the material. Children are constantly being asked to master new material when they have long since mastered the form of the its presentation.

This paper will illustate how the process of achieving intersubjectivity in a routine task like reading takes place and how the construction of intersubjectivity - which I will refer to as scaffolding - can vary as a result of the teacher norms being brought to the task.

Methods

I investigated the process of teaching reading to learning disabled children in a large Southwestern school district. The children were second and third graders, had mild disabilities and received reading instruction in both the mainstream and resource classroom. The fact that the children received reading instruction in both settings allowed me to compare instructional interaction in the two settings while holding child characteristics constant.

Twelve children with mild learning disabilities in three schools were observed for six to nine months. Observations began in the resource setting, then as

children were selected for the study, observations moved into the mainstream setting. Reading lessons in two of the three schools were audiotaped and transcribed. Ten reading lessons, five in each setting, were chosen for analysis controlling for the effects of activity and group size. Reading groups consisted of 6 - 10 children in both settings. Coding and analysis focused on the performances of the target children and on the performances directed to them by their teachers and consisted of two steps, first, a sociolinguistic analysis of the transcript data and, second, an analysis of the data according to Vygotskian theory as developed by Wood, Bruner and Ross (1976); Wertsch (1978,1979); Rogoff and Gardner (1984); Tharp and Gallimore (1988); and others. This paper will concentrate on reporting the results of the latter analysis.[1]

RESULTS

Pilot work on reading suggested that there were differences between mainstream and special education teachers in the use of scaffolding during reading. My results, presented here, show that there are differences between the settings in scaffolding and other sociolinguistic components related to assistance. Other researchers using coarser measures of assistance have found similar differences in reading with slightly

different groups (Allington 1983, Duffy 1986, Hiebert 1983, McDade and Murty 1989).

DESCRIPTION OF SCAFFOLDING IN THE TWO SETTINGS

1. General Features:

In order to measure the construction of intersubjectivity (that is, scaffolding) during the reading lessons, I devised a number of measures. These measures were all developed based on the concept of a scaffolding episode. In my analysis, the scaffolding episode consisted of the interactions a child has with a teacher around a particular problem. A scaffolding episode begins with a teacher initiation, and a child's incorrect response, incomplete (or partially correct) response, or lack of response. The episode continues with the teacher scaffolding the child and ends when the child answers correctly and fully or when the teacher abandons scaffolding by giving the answer, by having another child give the answer, or by simply moving on to another topic with another child.

The scaffolding episode was measured in various ways. The first was task length. Task length is measured by the number of pairs of teacher and child exchanges during a scaffolding episode and gives an idea of how persistent a teacher is in supporting a challenged student. Mean task length was shorter in the mainstream classroom (mean of 5.2 exchanges), longer in the resource classroom (mean,

8.08 exchanges). A second measure of scaffolding is the total number of scaffolding episodes that occurred during the six coded minutes of the reading lesson. There were consistently fewer scaffolding episodes in the mainstream classroom that were four interactions long or longer (4 total, mean .8) than in the resource room (8 total, mean 1.6) and this difference approached significance using the binomial test ($p = .109$).

The following example shows a scaffolding episode in the mainstream classroom. The task length is 5, in other words there are 5 exchanges (indicated by "[]") that take place between teacher and child before the scaffolding ends with the child achieving intersubjectivity with the teacher. There were 2 similar instances of scaffolding occurring in the coded transcript and it was scored accordingly.

= T begins discussion of Friday's reading lesson

T Who remembers what we did on Friday?
T It was a lesson that was more fun than usual.
T Samantha?

S We (um) (we were) we made an alligator out of yellow paper.

T Uh huh.

S (pulls her alligator out of her reading book).

T Oh, you have yours.
T It was a lesson in learning how to do what, David?

D Read directions.

[1. T Elizabeth, if you were going to make something that had a set of directions, what would be the first thing that you would do before you started?
E (takes thumb out of mouth) Read.]

[2. T Read what?
E Directions.]

[3. T Would you read just the first one or would you read all of them?
E All of them.]

[4. T Why do you suppose you should read all of them first?
E Because if you don't you will (um) mess up.]

[5. T You could, couldn't you?]
(tnote 75, p. 1-2)

2. Teacher prompts

Teacher prompts were coded only when they were directed toward the target child and were measured on a continuum based on how much previous knowledge the child would need to respond correctly.

The prompt continuum ranged from low to high complexity: "simplifies request;" "direct prompt, question or command;" "indirect prompt, question;" and "indirect statement, implying that some action be taken on the part of the hearer." A simplified request often occurs after a child error or failure to answer. For example, after a word pronunciation error, the teacher might give the correct pronunciation and ask the child to repeat it.

Resource teachers simplified their requests more often than mainstream teachers (this difference approached significance on the t test, $p = .0889$). Remember, these

are the same children in both settings. This finding suggests that resource teachers are more likely to tailor their speech to a child's developmental level.

3. Student Success

Student success in the scaffolding episodes was tied to the persistence of teachers in scaffolding. As described above the total number of scaffolding episodes in the two settings is not that different when shorter episodes are included, 8 in the resource room and 4 in the mainstream classroom. But when we look at episodes with longer task length, those with 8 or more interactions, the picture changes radically. The resource room had 5 such lengthy interactions in the coded period, the mainstream classroom had none. In the longer episodes, the teacher is more likely to break the task into its component parts. For, instance when trying to construct intersubjectivity with a student about the motivation of a character in a story, she may have the student go back, read a relevant passage, help him or her interpret it, then select another relevant passage for the student to read or interpret, until the motivation of the character becomes clear.

An example of the process of building to an answer, can be found in the following discussion. In the story, a mouse named Sylvester was driven out of his home in the country by development and came to the city to find a home. Eventually, he enters a music shop and makes his

home in a guitar. The teacher in this example tries to get her students to understand the significance, to Sylvester, of the guitar as a home, without giving them the answer. The children are confused because the story didn't say directly that the guitar became Sylvester's home. Instead, it took the elements of the guitar (illustrated in extreme close-up, so that the outline of the guitar was not apparent) and described how they made excellent elements to a home (the body as house, the sound hole as door, and the strings as a fence). Note that the teacher (T) often restates, and, although she turns to another child (Jimmy) to read a passage in the middle of the episode, she returns to Michael to check his understanding. Note also, how important the partially correct student answer is. It lets the teacher know she is in the ball park and she can maneuver there until Michael (M) picks up on the game plan.

mid-level prompt
T What was he looking for when he went into the music shop?

incomplete response
M Um (a a) a musical instrument.
= T doesn't get the answer she wants, which is 'a home,' so she tries another approach (simplifies by moving back to a previously answered question)
T What was he looking for when he left the country and came to the city?

correct response to lower level prompt
M Looking for a house.

evaluation, reinforcement
T A house!
T He was looking for a home.

back to mid-level prompt
T And when he went into the music shop, what did he see?

partially correct, still hasn't gotten to 'a home'
M Saw instruments.

evaluation, reinforcement
T He saw an instrument.

more specific, lower level
T What did he see also?
T What did he say to himself?

partially correct
M A guitar (pronounced gheetar).
T Read me page one seventy eight, Jimmy, please?
J (reading) (In the mouse) In the music shop (Sh*) Sallone^
T Sylvester (correcting J's confusion with Sylvester Stallone).
J (reading) Sylvester saw a fine house with a little door for goin' in and comin' out.
T Alright, would you stop, please.

evaluates
T (Would you see) would you understand that that sentence answers the question that I was asking you?

mid-level prompt
T I asked you (what did Sylvester) what was he trying to find.

partially correct
M A door.

evaluation, then mid-level prompt
T No, he was not trying to find a door (with question inflection).

fully and correctly replies
M He was trying to find a home.

evaluates, restates
T He was trying to find a home (in affirmation).
T So when he went into the music shop he saw a fine house.

(transcript 31)

The teacher, in this case, is tenacious in getting Michael to find the answer. The teacher who is successful in scaffolding must have the self-discipline to refrain from giving the child the answer and to refrain from turning to another child for the answer.

Again, in the resource room (during the coded period) there were five such episodes (task length greater than 8). In the mainstream classroom there were none. Thus, in the resource room, the children were much more likely to experience the small successes in constructing intersubjectivity that truly bring them to a level of functioning that they would be unable to achieve without assistance. In other words, they are more likely to be brought from their zones of actual development into their zones of proximal development producing greater success (Vygotsky 1978).

4. Particular Features of Teacher and Child Language:
Initiation of interaction

In both settings, teachers initiated interaction most of the time (resource, 232 teacher initiations out of 284 total interactions; mainstream, 236 out of 252 total interactions). However, in the resource room, the children were able to initiate interaction significantly more often than they were able to in their mainstream reading groups (resource, 47 initiations by the target

children; mainstream 12, p = .051). In the resource room children were given more opportunities to control the interaction, but a comparison between teachers and students of the total number of initiations shows that the total interaction initiated by students is still pitifully small.

DISCUSSION

We have seen that resource teachers had longer interactions with children in which they made more adjustments that catered to a reader's zone of proximal development. We have seen that students were more likely to have successful reading episodes and were more likely to initiate interaction in the resource room. The question becomes why did teacher-child interaction vary between settings when the curriculum, group size, and the students themselves were the same?

Teacher Discourse:

This occurs because mainstream teachers persist in the use of the recitation model of teaching to a greater extent than do resource teachers. The recitation model is a teacher-centered approach while the cooperative learning model and the scaffolding model are more student centered. The recitation model is the traditional model of classroom organization (Mehan 1982, Tharp and Gallimore 1988) in

which the teacher controls the floor and moves quickly from student to student checking for concept attainment. It has many benefits in terms of discipline and organization for the teacher of a large number of students. It requires students to be alert because they might get called upon to answer a question. It has strict discourse rules such as requiring students to raise their hands to speak and allowing them to speak only when called upon. It is clear that these rules prevent discourse from devolving into a free-for-all and help maintain discipline. The cognitive benefits to students of this style of organization are less clear. The resource teachers made greater use of more effective and desirable pedagogical practices.

Physical Differences Between Settings:

Ethnographic research (not reported here) showed that the mainstream teachers' adherence to the recitation style was not just a matter of discourse. The settings also differed in their physical layout. In particular, the mainstream evinced a more hierarchical physical environment in terms of its arrangement of space and the teacher's position within it. In the mainstream classroom, the teachers consistently positioned themselves at the front of the classroom. The student desks were all directed toward the teacher. With the brief exceptions of the reading groups and some one-to-one contact,

children spent their days either interacting with the teacher in a group recitation while seated at their desks (e.g., science lesson, morning opening) or working alone at their desks. Teachers provided little opportunity for children to work cooperatively or collaboratively on projects in the classroom. This structure was echoed in playground games in which the children competed individually rather than in true cooperative teams.

The resource setting was more egalitarian in arrangement. However, it should be clear that the arrangement was not truly egalitarian in that the teacher still exerted a great deal of control over the interactions in resource room. The more egalitarian nature of the physical arrangement in the resource room means that students are clustered into small groups headed by the teacher or her aide and that students generally spent no time working alone at a desk. In social terms, the resource room was more work oriented, but at the same time, offered students a great deal more personal contact with teachers. Special education in the form of the resource room, speech therapy and other special services at least doubled the amount of time children in this study spent in small group interaction. Cooperative learning was observed more often in the resource room, but, like the mainstream, was limited to the district writing program.

I believe that mainstream teachers' adherence to the recitation model explains, at least in part, why these these settings differ both physically and in terms of a teacher's discourse style or discourse norm. Because the resource teacher does not follow the recitation norm, learning disabled children are better supported academically in the resource room This can be demonstrated by linking the process of building intersubjectivity (or scaffolding)described here with other, similar, concepts in education literature. These are the concepts of: dialogic interaction, sustaining feedback, and wait-time. Research on these concepts is a useful addition to the scaffolding literature because it provides support for the instructional efficacy of scaffolding.

Palincsar (1986) states that, "The hallmark of scaffolded instruction is its interactive nature," and that, "Critical to the teaching-learning process is the role of dialogue: it is the means by which support is provided and adjusted" (p. 75). In her study she trained teachers to use a dialogic model in their teaching discourse -- predicting that this would increase scaffolding.

Palincsar demonstrated that teachers were able to adopt the dialogic model and in doing so scaffold

learning. She found that children who received dialogic instruction made much larger gains than those who had not.

Larrivee (1985) reports on a large study of mainstreaming among elementary students in the Northwest. In this study, she examines what teaching practices are effective for successful mainstreaming. One important concept in her research is sustaining feedback. According to Larrivee, sustaining feedback is the process of "asking subsequently clarifying questions to students who make incorrect responses" (1985:91). Clearly, this is a process that is nearly synonymous with scaffolding as it is described in this dissertation.

Sustaining feedback was correlated with more academic learning time and more creative initiative on the part of the students (Larrivee 1985:91-109). This cluster of findings is similar to my findings on scaffolding. Most importantly for our purposes, the use of sustaining feedback was correlated with learning gains. This fact suggests that scaffolding, itself, can also be correlated with learning gains.

Anderson, Evertson and Brophy (1979) also used the concept of sustaining feedback in their research on effective teaching in first grade reading groups. They had a simple treatment, they gave teachers a short manual of effective teaching practices and followed up with a discussion session. They found that treatment teachers

were able to adopt many of the effective teaching practices in the manual, including sustaining feedback. Treatment teachers used more sustaining feedback (scaffolding) and this was positively related to achievement. Treatment teachers used less of what Anderson and colleagues termed terminal feedback, that is, supplying the answer to a student and asking or allowing another student to give the answer. Terminal feedback was negatively related to achievement. In addition, the treatment group had a higher percent of incorrect answers that were improved by the student through sustaining feedback, again, this was positively related to achievement. It is evident that many of Anderson's findings parallel the differences I found in the details of scaffolding between mainstream and resource room teaching.

The studies on dialogue and sustaining feedback discussed above, suggest that scaffolding, or building intersubjectivity with a student, is an effective instructional strategy and that it is effective with a variety of instructional topics and among a variety of different age groups. My findings that resource teachers do more of it attest to the effectiveness of resource room instruction in supporting learning disabled children academically. It also shows that there is a widely-used model of scaffolding that can be adopted by the mainsteam

teacher. The adoption of this model by mainstream teachers would not be easy because it would require something akin to a social change. But the fact that this model is already in existence within the schools can, at least, be somewhat heartening.

1. See: Hall, Elizabeth A. (1991) An Ethnographic and Sociolinguistic Examination of the Mainstreaming of Learning Disabled Second and Third Graders. Dissertation in Anthropology, UCLA; UMI Publication # 9115284.

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